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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/684,205	10/06/2000	Jack H. Hetherington	PIE-10102/29	2529

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EXAMINER

NGUYEN, JIMMY H

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/684,205

Applicant(s)

HETHERINGTON, JACK H.

Examiner

Jimmy H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-12 and 14-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-12 and 14-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 21 January 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is made in response to applicant's amendment filed on 01/21/2003 (entered into the file wrapper as Paper No. 4). Claims 1-3, 5-12 and 14-26 are currently pending in the application. An action follows below:

Specification

2. The disclosure is objected to because of the following informalities: page 22, "We claim" must be deleted. Appropriate correction is required.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: there is no reference sign in figure 1B.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature, "an entire radial area around the axis of rotation" recited in claim 25, line 5, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claims 1 and 11 are objected to under 37 CFR 1.75(a) because although these claims meet the requirement 112/2d, i.e., the metes and bounds are determinable, however, the features, "user position" (see claim 1, lines 11, 14 and 16) should be changed to -- the position of said elongated member --, and "user position" (see claim 11, lines 13, 16 and 17) should be changed to -- the position of said joystick lever --, so as to be consistent with the disclosure; see specification, page 11, lines 9-11.

6. Claims 8 and 9 are objected to under 37 CFR 1.75(a) because although this claim meets the requirement 112/2d, i.e., the metes and bounds are determinable, however, "stationary signal detecting capacitor", "stationary signal transmitting capacitor plate", "dielectric element", "elongate member" and "a user" should be respectively changed to -- second stationary signal detecting capacitor --, -- second stationary signal transmitting capacitor plate --, -- second dielectric element --, -- second elongate member --, and -- said second elongated members --, so as to make them to be distinct from the features recited in independent claim 1 and to be consistent with the disclosure, see specification, page 11, lines 9-11.

It is in the best interest of the patent community that applicant, in his/her normal review and/or rewriting of the claims, to take into consideration these editorial situations and make changes as necessary.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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8. Claims 8, 9, 25 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims 8 and 9, it is not clear what the Applicant means “wherein the elongated members are supported at right angles to one another to measure movement in x and y dimensions”, as recited in claim 8, lines 5-6, i.e., the movement of what object is measured.

As per claims 25 and 26, it is not clear what the Applicant means “neither plate consuming an entire radial area around the axis of rotation”, as recited in claim 25, line 5, i.e., what an entire radial area around the axis of rotation is, the entire radial area of one of the capacitor plates or the dielectric element or other element.

9. The following art rejection applied to claims 25 and 26 is based as best understood by the examiner.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Shahoian et al. (USPN: 6,304,091 B1), hereinafter Shahoian.

As per claims above, the claimed invention reads on Shahoian as follows: Shahoian discloses a capacitive position sensor (a position sensor 100, see fig. 3C) for interconnection to a computer (col. 1, lines 20-24, col. 2, lines 41-44, col. 9, lines 51-54) comprising a non-circular

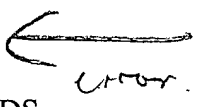
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dielectric member (a dielectric 107, col. 8, line 39) coupled to a scroller wheel (col. 9, lines 3-6), a pair of electrically conductive capacitor plates (vane 110 and stators 102-108 and a PCB 109/120, col. 8, lines 37-41), a circuitry (an electronics circuit of fig. 3f, see col. 9, lines 25-42) and an output (an output used to input the position of a user-manipulated physical manipulandum to the computer, col. 9, lines 51-54). The elements in the claim are read in the reference.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1-3, 5-7, 10-12 and 14-²⁴~~26~~ are rejected under 35 U.S.C. 103(a) as being unpatentable over Shahoian, and further in view of Baker et al. (USPN: 5,576,704, cited in IDS filed on 01/29/2001), hereinafter Baker. 

As per claims 1, 2 and 22, Shahoian discloses a capacitive position sensor (a position sensor 10, see fig. 1) for interconnection to a computer (col. 1, lines 20-24, col. 2, lines 41-44, col. 9, lines 51-54) comprising a signal detecting capacitor plate (a second plate or vane 14), a stationary signal transmitting capacitor plate (a first plate or stator 12), a dielectric member (a dielectric material 15, col. 4, line 19), an elongated member (user manipulandum or joystick handle 112, col. 9, lines 3-6, fig. 3C), a circuitry (an electronics circuit, see fig. 3a) and an output (an output used to input the position of a user-manipulated physical manipulandum to the computer, col. 9, lines 51-54). Accordingly, Shahoian discloses the claimed subject matter except that Shahoian discloses the signal detecting capacitor plate (i.e., a second plate 14)

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movable instead of stationary, as recited in claim above. In other words, the difference between the Shahoian reference and the invention defined in claims above is a stationary of the signal detecting capacitor plate.

However, Baker discloses a related capacitive joystick (see fig. 1) comprising a stationary signal detecting capacitor plate (an electrode 135), a stationary signal transmitting capacitor plate (another electrode 135) and a dielectric member (140) laterally shifting in a plane parallel substantially to the stationary plates. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize Baker's teaching in the device of Shahoian, i.e., providing Shahoian's the signal detecting capacitor plate (14) being stationary, because this would prevent wide voltage fluctuations and variations in the signals to be sensed between the signal detecting capacitor and the electronics circuit, occurred due to the movement of the signal detecting capacitor plate, thereby producing an accurate position of the user manipulandum or joystick handle. Therefore, it would have been obvious to combine Baker with Shahoian to obtain the invention as specified in claims above.

Regarding to claims 11, 12 and 24, these claims recite limitations similar to those of claims 1, 2 and 22 above, except these claims further recite a housing having a top surface. However, Baker further discloses the joystick further comprising a housing having a top surface, as claimed (see fig. 1). Therefore, these claims are unpatentable over Shahoian in view of Baker.

Regarding to claim 3, Shahoian further teaches the elongated member (i.e., user manipulandum) being a user graspable joystick (a joystick handle, see col. 9, lines 3-6), and Baker also teaches the same (a control shaft 107, see fig. 1).

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Regarding to claims 5 and 14, Shahoian further teaches the dielectric element being non-circular (a wedge-shaped dielectric member 107, see fig. 3c) and enabling the circuitry to determine the user rotation of the elongated member (col. 9, lines 3-13).

Regarding to claims 6, 15, 16 and 19, Shahoian further discloses four arcuate segments (stators 102-108, best seen in fig. 3C).

Regarding to claims 7 and 17, Shahoian further discloses the dielectric element being a circular disc (fig. 4 and the description at col. 4, lines 19-21, imply the dielectric element being a circular disc).

Regarding to claim 10, , Shahoian in view of Baker further teaches the claimed subject matter (see Shahoian, fig. 3a and the corresponding description).

Regarding to claim 18, Shahoian further teaches the dielectric element being rectangular-shaped (see fig. 1), circular-shaped (fig. 4) or wedge-shaped (fig. 3c), but does not disclose expressly the dielectric element being oval or egg-shaped, as claimed. However, absent a showing of criticality it would have been within the level of skill in the art and obvious to one having ordinary skill to engineering design the shape an element as desired as was judicially recognized in re Dailey, 149 USPQ 47 (CCPA 1976). Therefore, this claim is rejected for the reason as set forth above.

Regarding to claim 20 as applied to claim 1 above, Shahoian in view of Baker further teaches the claimed subject matter (see Shahoian, fig. 3a).

Regarding to claims 21 and 23, Shahoian in view of Baker further teaches the claimed subject matter (see Baker, fig. 1).

Response to Arguments

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14. Applicant's arguments with respect to the rejections in the last Office Action have been considered but are moot in view of the new ground(s) of rejection. See the new ground rejections above.

In response to applicants' argument that the reference fails to show certain features of applicants' invention, it is noted that the features upon which applicants state "the member being operative to laterally shift the element in the x or y directions in a plane substantially parallel to the stationary plates", is not recited in the rejected claims filed in the original claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is (703) 306-5422.

The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at (703) 305-4938.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

JHN
April 2, 2003


Amare Mengistu
Primary Examiner